

# BUSINESS REQUIREMENTS

## Gathering

### PROJECT DETAILS

PROJECT NAME		
SauceDemo From SwagLabs		
This Document is By		
<ul style="list-style-type: none"><li>→ Mohamed Magdy Moustafa Kabary</li><li>→ Abdelrahman Ashraf Mohamed Abdelnaby</li><li>→ Ahmed Ayman Mahmoud Mohamed</li><li>→ Shahd Magdi Esmail Mohammed</li><li>→ Bahaa Eldin Essam Mohamed</li><li>→ Mennatu Allah Mamdouh Sedeek Osman</li></ul>		
DOCUMENT NO.	DATE	VERSION NO.
	21.3.2025	

## 1 - > Abdelrahman Ashraf

### 1. EXECUTIVE SUMMARY SNAPSHOT

This report inconspicuous components the basic exchange necessities for assessing and analyzing the functionalities of SauceDemo (<https://www.saucedemo.com/v1/>). The basic objective is to survey the platform execution, client experience, and any potential issues inside the getting get ready. This process is closely linked to recognizing issues, proposing solutions, and ensuring that client travel experiences are smooth and enjoyable. The documentation is pending evaluation by engineers, reviewers, decision-makers, and other key stakeholders who are dedicated to thoroughly reviewing the framework and implementing necessary enhancements

## 2. PROJECT DESCRIPTION

This study focuses on examining the SauceDemo platform, with particular emphasis on its e-commerce features, including user and product validation, cart functionality, and checkout processes. Though the arrange gives a pivotal shopping experience, it is basic to recognize and address potential issues like execution bottlenecks, security threats, and UI/UX inefficient viewpoints. Addressing these challenges allows us to enhance system reliability, improve customer engagement, and overall effectiveness.

Key Challenges:

Enhancing system responsiveness and user-friendliness.

Identifying and mitigating security vulnerabilities.

Streamlining the checkout process for a seamless experience.

**2 - > Bahaa**

## 3. PROJECT SCOPE

IN-SCOPE ITEMS	OUT-OF-SCOPE ITEMS
Login functionality (valid & invalid users)	Integration with external payment gateways
Add/remove items from cart	Mobile responsiveness (if web-only focus)
Checkout process validation	Backend database security testing
Sorting and filtering items	Advanced security penetration testing
UI/UX testing across multiple browsers	Multi-language support (if not implemented)

Error message validation (invalid inputs)	AI or chatbot testing (if not implemented)
Session handling & logout functionality	Third-party integrations (unless required)
Testing user roles and permissions (if any)	Large-scale automated testing (beyond scope)
Page responsiveness and layout testing	Load testing for extremely high traffic
Automation testing (UI & functional)	Performance testing beyond expected load
API testing (basic endpoint validation)	
Load testing (including 50 users shopping scenario)	
<b>Other Testing Activities (if needed)</b> <ul style="list-style-type: none"> <li>• <b>Additional exploratory testing</b></li> <li>• <b>Regression testing (if time permits)</b></li> <li>• <b>Smoke testing before major releases</b></li> <li>• <b>Cross-device compatibility testing (if needed)</b></li> </ul>	

### 3 - > Ahmed Ayman

4. BUSINESS DRIVERS	
It is a set of factors that give the project an incentive to grow and profit through a smooth shopping experience that expands the market and provides efficiency for operation.	
<b>Increase Sales &amp; Revenue 1:</b>	Improve targeted advertising and SEO to increase traffic Provide personalized offers and discounts based on customer behavior.
<b>Operational Efficiency 2:</b>	Improve inventory management processes to prevent shortages or excesses of unimportant products. Customer satisfaction.
<b>Competitive Advantage 3:</b>	Choosing a distinctive and visually appealing front-end. Providing unique products that are not available to competitors.

<b>Compliance &amp; Security 4:</b>	Protecting the site from cyber attacks. Secure payments through encryption and anti-fraud technologies.
-------------------------------------	--

## 4 - > Mennatullah Mamdouh

### 5. PRESENT PROCESS

#### Functional Requirements for a Login Form:

##### 1. Input Validation and Error Handling:

##### FR-1.1: Empty Input Handling:

The login form must prevent submission if the user clicks the "Login" button without entering any data in the username or password fields.

The system must display appropriate error messages indicating that both username and password are required.

##### FR-1.2: Partial Input Handling (Username Only):

The login form must prevent submission if the user enters a username but leaves the password field empty.

The system must display an error message indicating that the password is required.

##### FR-1.3: Partial Input Handling (Password Only):

The login form must prevent submission if the user enters a password but leaves the username field empty.

The system must display an error message indicating that the username is required.

##### FR-1.4: Incorrect Credentials Handling (Both Incorrect):

**The login form must prevent login if the user enters an incorrect username and password combination.**

**The system must display an error message indicating that the username or password is incorrect.**

**FR-1.5: Incorrect Credentials Handling (Correct Username, Incorrect Password):**

**The login form must prevent login if the user enters a correct username but an incorrect password.**

**The system must display an error message indicating that the username or password is incorrect.**

**FR-1.6: Incorrect Credentials Handling (Incorrect Username, Correct Password):**

**The login form must prevent login if the user enters an incorrect username but a correct password.**

**The system must display an error message indicating that the username or password is incorrect.**

**2. Successful Login:**

**FR-2.1: Correct Credentials Handling:**

**The login form must allow login if the user enters a correct username and password combination.**

**Upon successful login, the user must be redirected to the designated homepage or dashboard.**

**FR-2.2: Homepage Redirection:**

**Upon successful login the user must be redirected to the home page.**

**3. User Interface (UI) Considerations (Implied):**

**UI-3.1: Clear Error Messages:**

**Error messages must be clear, concise, and informative, guiding the user on how to correct the input.**

**UI-3.2: Visible Login Button:**

**The login button must be clearly visible and easily clickable.**

#### **UI-3.3: Username and Password Fields:**

**The login form must include clearly labeled username and password input fields.**

**The password field should obscure the entered characters for security.**

#### **Non-Functional Requirements (Implied):**

##### **NFR-1.1: Security:**

**The system must protect user credentials from unauthorized access.**

**Password storage and transmission must adhere to security best practices.**

##### **NFR-1.2: Usability:**

**The login form must be user-friendly and easy to use.**

**Error messages should be helpful and guide the user towards successful login.**

##### **NFR-1.3: Performance:**

**The login process should be reasonably fast.**

**These requirements provide a solid foundation for developing and testing the login form.**

## **6. PROPOSED PROCESS**

## **Proposed Process (Proactive and Integrated):**

### **1. Requirement Analysis and Test Planning:**

- Thorough review of login page requirements, including functional and non-functional aspects (security, performance, usability).
- Creation of comprehensive test cases covering all possible scenarios:
  - Positive tests (valid credentials, account recovery).
  - Negative tests (invalid credentials, account lockouts, error handling).
  - Security tests (SQL injection, cross-site scripting, brute-force attacks).
  - Performance tests (load testing, response time).
  - Development of an automated test suite.
- Test environment setup, mirroring production as closely as possible.

### **2. Development with Continuous Integration (CI):**

- Developers implement login page features.
- Automated tests are integrated into the CI pipeline.
- Every code change triggers automated tests.
- Immediate feedback to developers on test failures.

### **3. Security Testing as a Core Component:**

- Security testing is integrated into the testing process from the beginning.
- Automated security scans and manual penetration testing are performed regularly.
- Security vulnerabilities are reported and addressed promptly.

### **4. Comprehensive Testing and Reporting:**

- Automated tests are executed regularly.
- Manual exploratory testing is performed to uncover edge cases.
- Detailed test reports are generated, including:
  - Test results (pass/fail).
  - Defect reports with detailed steps to reproduce.
  - Security vulnerability reports.
  - Performance metrics.

### **5. Defect Resolution and Retesting:**

- Developers fix reported defects.
- Retesting is performed to ensure fixes are effective.
- Regression testing is conducted to verify that fixes do not introduce new issues.

### **6. Pre-Deployment Validation:**

- Final round of testing in a staging environment.

- Sign-off from quality assurance and security teams.

#### 7. **Post-Deployment Monitoring:**

- Continuous monitoring of login page performance and security in the production environment.
- User feedback is actively collected and analyzed.
- Regular security audits and penetration testing.

#### 8. **Documentation and Training:**

- Up-to-date documentation of login page functionality and security measures.
- Training for support teams on troubleshooting login issues.

#### **Key Improvements:**

- **Shift to Proactive Testing:** Issues are identified and resolved early in the development cycle.
- **Integrated Security:** Security is a core part of the testing process.
- **Automation:** Automated tests provide rapid and consistent feedback.
- **Comprehensive Testing:** All login scenarios are thoroughly tested.
- **Faster Defect Resolution:** Rapid feedback and automated tests accelerate defect resolution.
- **Improved Quality and Security:** Reduces the risk of login failures and security vulnerabilities.
- **Enhanced User Experience:** Leads to a more reliable and secure login process.

By implementing this proposed process, organizations can significantly improve the quality, security, and user experience of their login systems.

## **5 - > Mohamed Magdy**

### 7. FUNCTIONAL REQUIREMENTS



## 1. User Login and Authentication

### Login Process

Users should be able to log in using one of the predefined usernames. Currently, there is a list of valid usernames (e.g., "standard\_user", "locked\_out\_user", "problem\_user", "performance\_glitch\_user") that can access the site. All users will use the same password ("secret\_sauce") to log in. when logged in, users should be directed to the homepage to start shopping.

### Error Handling for Login

If a user enters wrong username or password, the system show an error message telling them that the login attempt failed.

## 2. Browsing and Filtering Products

### Product Display

When users visit the site, they will see a list of products. Each product will have its:

- Name
- A short description
- Price
- An image
- Sorting and Filtering

Users should be able to filter and sort the products in a few different ways:

- By Price: Sorting products from low to high or high to low as user wants.
- Alphabetically: Sort products alphabetically in ascending or descending order.

Users will see the new sorted list right away when they select a filter.

## 3. Shopping Cart Features

### Adding Items to Cart:

Users can add products to their shopping cart by clicking an "Add to Cart" button on each product page. After adding an item the cart will add a number showing how many items are in the cart.

### Viewing the Cart:

Users should be able to check what in their cart by clicking on the cart .

The cart page will show:

- All products added to the cart
- The total price of the items
- A button to proceed to checkout

## 4. Checkout Process

### Required Information for Checkout

To complete a purchase, users will need to provide:

- First Name (Required)
- Last Name (Required)

- Postal Code (Required)

If any of these fields are left blank, the system will display a reminder that the fields are required.

#### **Order Confirmation:**

When the user completes the checkout process, they'll see an order confirmation screen.

This will:

- Show a "Thank you for your order" message
- List the details of the products they've purchased
- Show the total amount of the order

After this step, the order cannot be modified or canceled.

## **5. Branding and Social Media Links**

### **Social Media Logos**

The site will display logos for Facebook, Twitter, and LinkedIn in the footer area. These logos are for visual branding only and are not clickable. They do not lead to any social media profiles.

## **6. No Payment Processing**

### **Payment System**

Since the site is for demo purposes, there is no actual payment processing. Users can go through the checkout process, but they will not be asked to pay. It's purely for showcasing how the e-commerce site works.

## **7. No Email Notifications**

### **No Email or Alerts**

The site does not send out any emails or notifications. There's no email system in place, so users won't receive confirmations or updates through email.

## **8. User Experience (UX)**

### **Simplicity and Navigation**

The site will be designed with a simple, easy-to-navigate layout, making it clear where users can browse products, add them to their cart, and proceed to checkout.

### **Responsive Design:**

The site will adjust its layout to work well on both desktop and mobile devices, ensuring that users can easily shop on any device.

## **9. Error Handling & Validation**

### **Checkout Validation**

If a user tries to complete the checkout without filling out the required fields (First Name, Last Name, Postal Code), the system will display an error message prompting them to fill in the missing information.

#### **Login Validation:**

If a user tries to log in with incorrect credentials (wrong username or password), the system will show an error message. After multiple failed attempts, the system will temporarily block further login attempts.

## **10. System Constraints**

### **No Real Transactions**

The site is only a demo and does not process actual payments or manage real inventory.

### **Simple, Demo Nature**

The site is designed to showcase basic ecommerce functionality. It doesn't include more advanced features like account registration, order tracking, or multiple payment methods these will be considered for future updates.

– PRIORITY		
VALUE	STATUS	DESCRIPTION
1	Immediate	User Login and Authentication: The login process is important to the project's success. Without allowing users to log in using predefined usernames, the site cannot work. Additionally, error handling for incorrect login attempts is crucial to ensure users receive feedback when they enter wrong credentials.
2	Immediate	Browsing and Filtering Products: This is a must have functionality that enables users to explore products. If this requirement is not met, users will not be able to browse or filter the products, which is the main feature of the website.

3	High	Shopping Cart Features: Users need to add items to the shopping cart, view what is in it, and proceed to checkout. The cart displays total items and the ability to proceed with the checkout process is essential for completing the transaction. While important, this is not as critical as the ability to browse and filter products or log in. However, without it, users can't complete their shopping .
4	Immediate	Checkout Process: This feature is crucial for any e commerce site to complete a transaction. The required fields for checkout (First Name, Last Name, Postal Code) must be implemented to ensure the user can complete their purchase. Order confirmation after checkout provides users with a sense of completion and clarity.
5	High	User Experience (UX): An easy experience , easy-to-navigate site ensures that users can easily browse products, add them to the cart, and proceed to checkout. The responsive design that should adapt to both desktop and mobile devices is essential to providing an accessible shopping experience across all platforms. not as critical as functionality like login or checkout, a smooth UX is vital to user satisfaction .

## 6 - > Shahd Magdy

– CATEGORIES (RC1)			
ID	priority	Requirement	Description
RC1-01	Immediate	Product Categories & Filtering	Products must be grouped into distinct categories to improve user navigation. Users should be able to filter products by category, and when selecting a category, the page should dynamically update to show only relevant products.

RC1- 02	high	Category Navigation & UI Design	The navigation menu should include category links, allowing users to browse specific types of products quickly. The category section should be visually clear and consistent with the overall design of the site to enhance user experience.
RC1- 03	high	Default Category View & Sorting	When users first visit the site, they should see a default category view displaying all products before applying any filters. Users should be able to sort products within a category based on price or name, ensuring flexibility in browsing.
RC1- 04	high	Mobile Responsiveness	Category navigation and filtering should be fully functional and easy to use on mobile devices to ensure accessibility.
RC1- 05	medium	Error Handling	If no products are available in a selected category, an appropriate message should be displayed rather than an empty page.

### 3 - > Ahmed Ayman

8. NON-FUNCTIONAL REQUIREMENTS	
ID	REQUIREMENT
Performance	<p>You must download the page as soon as possible with all users at the same time.</p> <p>The response time for each API request should be less than 500ms.</p>
Maintainability & Updates	<p>The code will be added to the ease of modification and development in the future.</p> <p>Record all errors in the Logging system to review and resolve them quickly.</p>

Scalability	<p>The site should support a lot of products without being affected by the performance.</p> <p>Use Content Delivery Network.</p>
Compatibility	<p>Support all browsers (Google Chrome, Firefox, Edge).</p> <p>It must be responsive to all devices.</p>
Security	<p>Using HTTPS protocol to encrypt data while it is being transferred.</p> <p>Encrypt user data, especially passwords, using Bcrypt or SHA-256 encryption.</p>